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WRC-2003 ADVISORY COMMITTEE

DRAFT PRELIMINARY VIEWS ON WRC-03

WRC-2003 Agenda Item 1.29 – to consider the results of studies related to Resolutions 136 [COM5/3] (WRC-2000) and 78 [COM5/23] (WRC-2000) dealing with sharing between non-GSO and GSO systems

ISSUE (Res. 136): Frequency sharing in the range 37.5-50.2 GHz between GSO and non-GSO FSS networks.

BACKGROUND (Res. 136): Both GSO FSS and non-GSO FSS systems are planned for operation within the 37.5-42.5 GHz and 47.2-50.2 GHz bands. FSS systems based on the use of new technologies associated with both geostationary and non-geostationary orbits are capable of providing the most isolated regions of the world with high capacity and low-cost means of communications. WRC-2000 took several steps toward harmonized use of the band 37.5-42.5 GHz by fixed and space services. The band 37.5-42.5 GHz is now allocated to the FSS (space-to-Earth) on a primary basis in all three ITU Regions.

WRC-2000 adopted, in Article **S21**, power flux-density (pfd) limits on GSO and non-GSO FSS space stations in the bands 37.5-40 GHz and 40.5-42.5 GHz in order to protect terrestrial services. The new limits are provisional, and are subject to review under Resolution 84 [COM5/28] (WRC-2000) at WRC-2003. The pfd limits vary between different band segments, and between geostationary and non-geostationary systems within each band segment, and will have to be taken into consideration when addressing sharing between GSO and non-GSO FSS systems in those band segments.

Sharing studies between GSO FSS networks and non-GSO FSS systems in the frequency range 37.5-50.2 GHz are underway taking into account the significant propagation losses at these frequencies, duration of interference events, differences in planned earth station antenna sizes, availability requirements, potential mitigation techniques such as polarization isolation, and the pfd limits in Article **S21**. Sharing between GSO FSS and non-GSO FSS systems in this range is currently regulated under No. **S22.2** of the Radio Regulations, which provides that "[n]on-geostationary-satellite systems shall not cause unacceptable interference to geostationary-satellite systems in the fixed-satellite service and the broadcasting-satellite service operating in accordance with these Regulations."

In Resolution 130 (WRC-97), WRC-97 recognized that "the diverging interpretations arising from No. **S22.2** result in an ambiguous regulatory status for both existing and future GSO and non-GSO systems in the FSS in the bands where this provision applies, with consequential risks for both types of systems." Because there has been little or no deployment of satellite systems to date in the band 37.5-50.2 GHz, WRC-2000 recognized in Resolution 136 (WRC-2000) that both GSO FSS and non-GSO FSS operators should be expected to exhibit flexibility in achieving the appropriate balance in the sharing environment, and urged administrations, in the application of Article **S22** to their GSO and non-GSO FSS systems in this range prior to WRC-03, to seek balanced sharing arrangements. Resolution 136 invites the ITU-R to undertake the appropriate technical, operational, and regulatory studies on sharing arrangements which achieve an appropriate balance between GSO

FSS networks and non-GSO FSS systems in the 37.5-50.2 GHz frequency range.

PRELIMINARY VIEW (Res. 136):

The U.S. continues to participate in the technical, operational and regulatory studies on sharing arrangements in order to achieve an appropriate balance between GSO FSS, non-GSO FSS, space research, and terrestrial systems in the frequency range 37.5-50.2 GHz.

The development of sharing criteria between GSO and non-GSO FSS systems in the 37.5-50.2 GHz range should, notwithstanding the current applicability of No. **S22.2**, be based on a principle of "equitable burden sharing," to be defined by appropriate ITU-R recommendations, between these two types of systems. Nevertheless, a first-come/first-served regime (e.g., **S9.11A**) without appropriate technical standards is insufficient.

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